May 22, 2013

**Response of IDB on Approval by Mail: Colombia: Energy Efficiency Financing Program for the Services Sector (IDB)**

Dear Zhihong

Please find enclosed our responses to the British and German comments and questions. I would appreciate if they can be circulated asap. As you know, the delay in the approval process had consequences internally and with our clients, and therefore we are very eager to get this approval.

Many thanks
Claudio Alatorre

# Responses to Comments and Questions from the CTF TFC Members on the "CTF Colombia: Energy Efficiency Financing Program for the Services Sector (IDB)" Proposal

*Prepared by the Inter-American Development Bank (IDB)*

22 May 2013

We would like to thank the governments of United Kingdom and Germany for their written comments and questions. Please find below our responses.

## United Kingdom's questions

> ***Q: We are still unconvinced that the focus on the private hospital sector is clear and justifiable ODA spend. In addition, the developmental benefits are not well articulated. For example:***
>
> ***"By reducing energy costs within total operational costs, resources can be re-invested in the business or invested elsewhere in the economy, contributing significantly to the achievement of the MDGs."***
>
> ***This does not make clear how re-investment contributes to the MDGs, nor does it indicate which of the MDGs is improved.***
>
> ***As this stands at the moment, we stand by our original suggestion to focus this project solely on the hotel sector where the developmental impact is in our view clearer, although still not well articulated.***

A: The answer below elaborates on 3 issues highlighted by the Government of the UK:

i. The need to articulate better the exact development impacts expected by the program;
ii. Further explanation on the relevance of supporting private sector hospitals for Colombia's sustainable development.
iii. The ODA eligibility of CIF projects in general.

**(i) Elaboration of the Development Impact of the Program and its Contribution to the Millennium Development Goals**:

The CTF Energy Efficiency Financing Program's development impact will result from 5 key results: (i) efficiency gains through reductions in energy intensity per unit of GDP, (ii) reduction of energy supply costs of important public service providers such as public hospitals and private sector clinics; (iii) environmental benefits of greening one of the fastest growing services subsectors in Colombia; (iv) development of a competitive green industry as demand increases; and (v) contribution to Colombia's achievement of the MDG 7 through reductions in GHG emissions.

There are also other development benefits which are expected to be obtained indirectly from the program: (i) the creation of new jobs both in the services and green industries, directly contributing to the achievement of MDG 1; (ii) gender benefits through job expansion in sub-sectors of the Colombian economy where women are more concentrated, contributing to the achievement of the MDG 3; and (iii) health and well-being benefits through the sustainable provision of public and private health services.

The expected contributions to the achievement of the MDGs are described in more detail below:

*Project's contributions to MDG 7: Ensure environmental sustainability*

Improved energy efficiency (EE) is important in achieving economic and social goals in Colombia, including improved access to energy services, eradicating poverty, improving environmental sustainability, and economic development. Advancing development in developing countries, such as Colombia, in a sustainable way is a shared international goal with benefits for developing countries themselves and for OECD countries alike. For this reason, due to the fact that reductions in carbon dioxide emissions in the hotel and clinic/hospitals sub-sectors are central to this project, it will directly contribute to the achievement of MDG 7: ensuring environment sustainability. Moreover, by implementing an innovative mechanism to secure returns on low GHG emissions investments, the project will also stimulate lasting changes in the functioning of the energy efficiency financing market ensuring economic viability of new projects in the absence of concessional financing.

Given the very rapid pace at which the hotel sub-sector has been growing, energy use and GHG emissions pose a serious threat to the environment unless new EE standards are adopted. For example, in the case of hotels, the sector has some 6,000 firms, most of which are small- and medium-sized firms operating with obsolete, energy-inefficient technologies. In the case of the health sub-sector, some 9,605 private health institutions are authorized by the Ministry of Health and they too operate with outdated, energy-inefficient technologies. This sub-sector has also been growing at a very rapid pace in recent years. Between 2000 and 2009, it grew by 38% in real terms.

Both indicators on carbon dioxide emissions and carbon dioxide emissions per capita (MDG 7) have been worsening since 2004.[1] One reason for this is the failure to properly evaluate the benefits of energy efficiency, likely resulting in underinvestment in this area. The foregone benefits represent the 'opportunity cost' of failing to adequately evaluate and prioritize energy efficiency investments. This opportunity cost may be very large, and in particular in a context of increasing demand in these sub-sectors in Colombia, stress on resources, and climate concerns and they may represent a cost that Colombia cannot afford to bear in the near future. The project recognizes the challenges of introducing new technologies due to the fact that end-users lack knowledge of the economic benefits of more energy-efficient equipment and perceive that EE investments are expensive and may prevent other investments. Therefore, by lowering energy costs and GHG emissions, as well as by introducing innovative mechanisms to address asymmetric information, the project is

[1] Indicators for Colombia "7.02 Carbon dioxide emissions" and "7.02 Carbon dioxide emissions per capita". Data collected from http://www.devinfo.info/ Version 6.0 on April 2013.

expected to increase the competitiveness of the hotel and clinic/hospital sub-sectors, directly contributing to the achievement of MDG 7 in ensuring environment sustainability.

In addition to promoting reduction of GHG emissions, the program will promote and verify the disposal and scrapping of old equipment, in accordance with the commitments of the Colombian government with the Montreal Protocol (along with other methodologies). Therefore, the project is expected to result in better practices by energy service companies and technology providers in complying with existing commitments and Protocols.[2]

Although energy efficiency appears to make a substantial contribution to private benefits, the benefits attributed to energy efficiency are multiple and range from sectorial benefits, such as productivity and survival rates; to economy-wide benefits such national competitiveness, greenhouse gas emissions mitigation, poverty alleviation and gender-inclusiveness. In conclusion, the multiplicity of public benefits attributed to the CTF Energy Efficiency Financing Program supports the argument that the Program will indeed have important development impacts for Colombia.

*Project's contributions to MDG 1: Eradicate extreme poverty and hunger and MDG 3: Promote gender equality and empower women*

From a development perspective, this project will directly contribute to MDGs 1 and 3 measured by indicators: i) employment-to-population ratio (MDG 1) and ii) share of women in wage employment in the non-agricultural sector (MDG 3).[3] By reducing energy bills and increasing access to clean energy, productivity increases will accrue to the owner of the company via higher production. In turn, higher productivity enhances competitiveness as well as the survival rates of local firms, protecting and even increasing the number of jobs in non-agricultural sectors (hotel, clinic/hospitals, sub-sectors serving the clean energy industry) for men and women, all of which are development benefits as predicated by MDGs 1 and 3. In fact, it is recognized that Clean Energy boosts economic growth and it has direct, indirect and induced effects on employment,[4] and in the case of the hotel and clinics/hospital sub-sectors will benefit especially women.

In particular, the job expansion in hotels, clinics and hospitals will benefit proportionally more women than men, due to strong female labor concentration in these sub-sectors. From a development perspective, income through paid employment is the main path through which families can break the cycle of poverty and reach a minimum standard of living. Since women are relatively more concentrated in both the health and hotels sub-sectors and are likely to provide a greater share of their income to financial support at home, families and women will benefit significantly from a job expansion in the services sub-sector. In the case of hotels, the sector employs around 128,000 people, of which 83,200 (65%) are women. In the case of the clinic/hospital sub-sector, the total employment in the sector amounted to

[2] See ESMR for more details.

[3] As a reference, in 2010, the MDG 1 indicator employment-to-population ratio was about 60 percent (47.4 and 73.5 respectively for females and males) for Colombia. The share of women in wage employment in the non-agricultural sector (MDG 3) has been dropping since 2001 and it was about 47.5 percent in 2008.

[4] http://www.americanprogress.org/issues/2009/06/pdf/peri_report.pdf

92,256 people, of which 65,561 were women (or 71% of that total).[5] All in all, job expansion in hotels and clinics/hospitals will directly positively impact MDG 3 contributing to Colombian development.

**(ii) Explanation about the Importance of Private Hospitals for Development**

Supporting the development of private sector hospitals in Colombia is a national development priority for the government as stated in the National Development Plan 2010-2014 "Prosperity for All",[6] the Colombian Ten-Year Health Plan (2012-2021)[7] and the Revised CTF Investment Plan for Colombia.[8] Further, the enhancement of the competitiveness and survival rates of hotels and of private hospitals through energy savings is expected to increase access to health services benefiting an important share of the poor in Colombia.

In fact, Law 100/93 provides universal health coverage through a compulsory social insurance scheme financed by taxes and government subsidies. Under this bill, every citizen receives a package of basic services through health promoting entities (EPS). The financing of the compulsory insurance scheme falls into one of two main schemes depending on the income level of the affiliate, a contributory scheme for those who can pay (formal sector workers and wealthier self-employed) and the subsidized scheme, for poor and low-income populations. According to the Unified Database of Affiliates (BDUA),[9] in 2013, 92.02% of the Colombian population was affiliated to the system. About 48.34% belonged to the subsidized, 42.84% were affiliated to the contributive regime, 0.83% belonged to the special regime and the remaining 7.98% of the population was not affiliated. The contributive and subsidized schemes cover basic services at mandated quality and technology standards, at both public and private health institutions.

As a result, despite the fact that the typical in-patient costs are higher than the average income of the poorest families, the subsidy scheme has allowed private hospitals to become a viable alternative for the poor. According to information of the Colombian Association of Integrative Medicine Business (ACEMI), in 2010, the population affiliated to the ACEMI's EPS represented 11.3% of the total population affiliated to the subsidized scheme. Moreover, it is estimated that more than 18 million health services were provided for people in the subsidized regime in 2010 by private health institutions affiliated to ACEMI.

In conclusion, energy efficiency can help to address the challenges faced by private hospitals relating to high operating costs[10] by reducing energy bills through insulation and design, delivering efficient appliances and water heating equipment and lighting, while providing training in efficient energy-use-behavior among the staff. Programs such as the CTF Energy Efficiency Financing Program will decrease the operating costs of private hospitals and will

[5] According to the statistics from DANE (Colombia's Departamento Administrativo Nacional de Estadística), employees in private health clinics are mostly women, reaching about 71 percent (or 65,561) of the total labor force employed in the sector in 2009. Furthermore, the hotel sector employed around 93,000 people in 2010, of which 47,000 (50.2 percent) were women.

[6] https://www.dnp.gov.co/PND/PND20102014.aspx

[7] http://www.minsalud.gov.co/plandecenal/Documents/General/Plan%20Decenal-Descripcion.pdf

[8] Endorsed at the meeting of the CTF Trust Fund Committee. Washington D.C. May 2-3, 2013, Agenda Item 5.

[9] http://www.fosyga.gov.co/Consultas/AfiliadosBDUA/tabid/436/Default.aspx

[10] See Loan Project Document (POD) for more details.

increase their survival rates in the market, guaranteeing the improvement of a needed and scarce health infrastructure to low-income patients, resulting in better health, well-being and livelihood.

**(iii) ODA eligibility of CIF projects in general**

A discussion about the ODA eligibility of the donor contributions to the CTF took place back in 2009. In that occasion, the Trust-Fund Committee concluded that such contributions "should qualify as ODA since such funds meet the ODA criteria".[11]

> ***Q: With regard to cost effectiveness, we would expect much lower costs for an energy efficiency intervention (although acknowledging that this is within the CTF investment criteria threshold of $200 per ton). Are the underlying assumptions deliberately conservative, or after 10 years, will a new load of investments be necessary to maintain the savings (e.g. because the equipment needs to be replaced)?***

A: The following were the **assumptions** used for estimating the cost effectiveness of CTF funding:

- Investments of $20 million corresponding to $10m in CTF funds and an additional $10m of funding leveraged from IDB/Bancoldex.
- A 10-year time horizon corresponding to the average lifetime of technologies supported by the program, under which energy savings can be guaranteed (while some technologies could have longer lifetime (some up to 25 years) after 10 years it is expected that the efficiency of technologies could be lower and energy savings not be as high as that estimated under the program).
- Estimated emissions reductions of 139,773 tons of carbon dioxide equivalent ($tCO_2e$) over 10 years. This is based on energy savings from both gas and electricity, of which electricity savings are roughly 70,000 MWh per year - 628,675 MWh over the first 10 years.
- An average carbon intensity of electricity saved of 0.22 $tCO_2e$/MWh.

From these assumptions it was calculated that the cost of abatement is USD $143 per $tCO_2e$. This calculation of the carbon cost is intended to be **conservative**, on account of several factors:

- It does not include other benefits, such as electricity savings, which would substantially reduce the cost per ton of emissions reductions.
- It does not include expected reductions in the cost of technology due to technological progress, scale, or learning – although the market costs of energy efficient projects are decreasing each year.
- It considers that the CTF investments are the totality of investments of the program (i.e. US$ US 20 million, from which US$ 10 million would come from CTF resources and US$ 10 million from a loan of the IDB to Bancoldex), which means that strictly

[11] See http://bit.ly/ODActf

speaking the CTF investments have costs of US$ 71.5 of CTF resources per $tCO_2e$ reduced.

- The projects themselves may last longer than 10 years. Energy-efficiency systems such as air conditioning and boilers are known to last at least 10 years, and although longer life is not guaranteed, it can be significantly longer.
- Emissions reductions from energy-efficiency projects are relatively low because Colombia's current electricity mix is primarily low-carbon hydropower. But the energy planning department (UPME) notes that energy efficiency projects in Colombia displace marginal sources of electricity first, and those are generally the most carbon-intensive. So, future projects may displace dirtier power.

Even with a unit abatement cost of USD 143 per $tCO_2e$, the projects under this program are **cost-effective for the borrowers**, with good returns: the program is expected to save roughly 70,000 MWh of electricity per year, which is worth almost $10m per year in 10 years. If hotel and hospital managers funded these investments in energy-efficiency projects with their own resources, it would be more profitable than many of their other investment opportunities: Using a 12% discount rate, this investment produces a net present value (NPV) of $21.5 million and an internal rate of return (IRR) of 46%. These returns are higher than Colombian government bond rates (under 5%[12]) or returns from other corporate investments – estimated at 8-9%.

***Q: The demonstration potential section does not articulate how scale up will be achieved. How will the programme go from the targeted 90 hotels and 34 clinics/hospitals with access to investment, to widespread energy efficiency investment in the sector with 6,000 hotels and over 9,500 private health institutions.***

A: There are several barriers and market failures that are impeding the EE market development in Colombia. This program aims to build mechanisms that decrease these barriers and mitigate risks that: (i) stimulate the demand for credit for EE projects (from hotels and private hospitals and clinics), and (ii) build mutual trust and confidence between key actors in the market (borrowers – i.e. hotels and hospitals, technology providers, and financial institutions). While the program will only cover about 90 hotels and 34 hospitals, it will allow demonstrating to all EE market actors that investments in EE can make financial sense. The program will put in place and consolidate mechanisms to manage investment risks related to EE and build alliances that will allow to develop the market for EE projects further (i.e. be replicated to the entre services sector). Experience shows that when the markets (clients, technology providers, financial institutions) understand and manage the risks and returns, the market tends to develop very fast - and the service sector market size is attractive.

As explained in the "Program Fit with CTF Investment Criteria", market studies[13] undertaken during the preparation of the program have shown that the main barriers for investments in

[12] http://www.bloomberg.com/news/2013-04-26/colombia-bond-yields-fall-on-rate-cut-prospects-peso-declines.html

[13] Estudio de Mercado sobre el Potencial de Eficiencia Energética y Energías Renovables para Hospitales y Clínicas Privados, E. Botero y D. Magallon, 2012; and Estudio de Mercado sobre el Potencial de Eficiencia Energética y Energías Renovables para Hoteles, E. Botero y D. Magallon, 2012.

EE in Colombia relate to perceived risks to invest in EE, in particular due to: (i) lack of capacity by LFIs to market, analyze and structure EE deals; (ii) lack of knowledge of these institutions on the risks and returns of these projects and on how to analyze them; (iii) lack of knowledge by potential beneficiaries (companies with high electricity bills) about the economic benefits of more efficient equipment and processes, resulting in low demand for EE investments in the market; and (iv) lack of financial capacity of local technical energy service providers (ESPs - these are firms or individuals which can analyze the energy consumption of beneficiary firms and suggest improvements in energy efficiency).

In order to mitigate these risks, as explained in more detail in the annex of the project proposal relating to the "Characteristics of the Program", the program has developed a number risk mitigation mechanisms that are summarized in the table below:

| Mechanism | Beneficiary | Objective |
|---|---|---|
| Standard Format to present: Technical and economic proposals | Primary beneficiaries: Clients, ESPs<br><br>Secondary beneficiary: FI, Insurance company, certifier) | Decrease the risk of project design. |
| Energy Performance Contract | Primary beneficiaries: Clients, ESPs<br><br>Secondary beneficiary (FI, Insurance company, certifier) | Decrease the risk of project design. |
| Validation system for ESPs/technology providers | Primary beneficiaries: Clients, FI, Insurance<br><br>Secondary beneficiary: ESPs | Minimize the operational and performance risks |
| Validation System of Projects | Primary beneficiaries: Clients, FI<br><br>Secondary beneficiaries: Insurance | Minimize the operational and performance risks |
| Verification of projects at installation | Primary beneficiaries: Clients, FI<br><br>Secondary beneficiaries: Insurance | Minimize the operational and performance risks |
| Verification System of Energy Savings once projects are operational | Primary beneficiaries: Clients, FI<br><br>Secondary beneficiaries: Insurance | Minimize the operational and performance risks |
| Energy Performance Insurance | Primary beneficiaries: Clients , FI | Mitigate the performance risk of the projects |
| Demonstrating Pilots | Primary beneficiaries: Clients , ESPs | Stimulate the demand |

The program is designed on the basis of incentivizing market-based investments in EE projects, which are currently very profitable but are not happening because of the lack of understanding and risk perception, and this is deriving in a low-priority investment by potential investors (i.e. hotels, clinics and hospitals) and lenders. The fact that the financing model proposed by the program provides for a **third-party technical oversight and for a performance guarantee insurance policy**, encourages service providers to design projects comprehensively, and minimize errors from the outset.

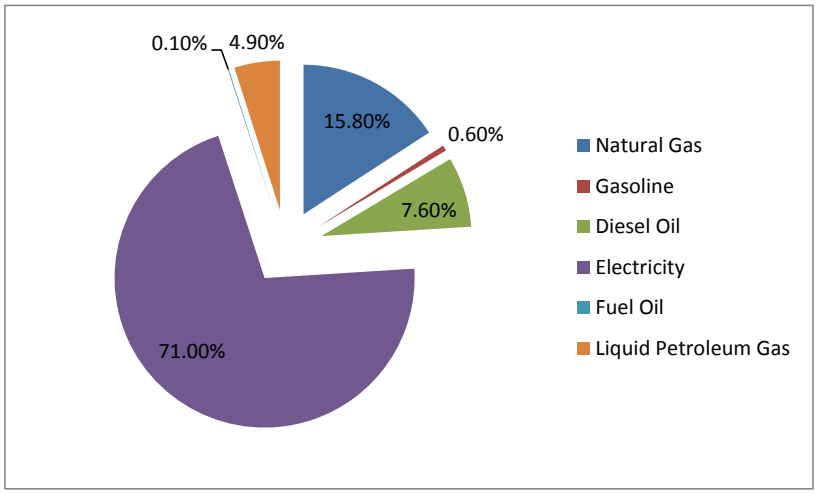
**The risk-mitigation measures designed in the program increase the likelihood of the replication** of the program to more hotels and hospitals, and its expansion to other sectors beyond hotels and hospitals – including factories, businesses, schools and universities, among

others. Many of these sectors include similar opportunities, and will benefit not only from a risk-reducing insurance policy and technical oversight, but also from the experience gained by the development of such programs in hotels and hospitals, crucial service-sector businesses.

In fact most of the establishments in the service sector in Colombia have similar energy demands,[14] which make the eligible **technologies in the program easily replicable** to other services sub-sectors. In particular:

- Electricity consumption in these sectors is primarily for:
  - Lighting
  - Air conditioning
  - Elevators
  - Office Equipment
- Natural gas consumption in the sector is primarily for:
  - Water heating
  - Steam production
  - Cooking food

Characteristics of the total energy demand of the services sector include significant electricity demand (71% of all energy used) and natural gas (15.8%), used for heating and producing steam. The following figure shows the consumption of energy per fuel.[15]




As a result, this program has selected to promote investments in the 6 technologies (air conditioning and refrigeration systems / units replacement, air conditioning control systems, high efficiency boilers, solar systems for hot water, pool acclimatization, co-generation) that are highly replicable and that have a high potential for reducing electricity use, which represents the largest energy cost in the overall service sector. The program will also support

[14] UPME, 2007. Caracterización del consumo de energía final en el sector terciario; and UPME, Proyección de Demanda de Energía en Colombia, Revisión Octubre de 2010.

[15] Ministry of Mines and Energy 2009.

the reduction in natural gas use for heating purposes. The potential of replication of the project to the service sector may also be enhanced by the fact that the greatest growth in demand for electricity in Colombia comes from sectors other than the industrial sector – the residential and service sectors account for the highest rates of growth in electricity consumption.[16]

**The replication would also be further stimulated by a number of existing government initiatives and dedicated funds geared to support renewable energy and energy efficiency**. Some of the exiting Bancoldex programs ("Bancóldex desarrollo sostenible" and "Bancóldex desarrollo sostenible y energías renovables") could support more EE projects if the demand for credit would be properly stimulated. The program also fits well in the strategic subprogram 3 of the Ministry of Mines and Energy's PROURE program: The Rational and Efficient Use of Energy and Non-Conventional Sources (Financial strategy and market momentum),[17] which has a number of courses of action that the program contributes to achieving. Currently, the government of Colombia is considering supporting the arrangements for second party validation and verification promoted in this program on an on-going basis and that the instruments to be piloted in the Bancoldex Program could be considered also under a working group that is analysing how the proposed mechanisms could be enhanced in the future to address the needs of the industrial sector.

Finally, as presented in the endorsed Revised CTF Investment Plan for Colombia,[18] other activities planned to promote energy efficiency under the CTF will build on this program to promote further replication of its business model. In particular, the IDB's Multilateral Investment Fund (MIF) and the Inter-American Investment Corporation (IIC, part of the IDB Group) intend to use US$4.52 million for loans and grants for technical cooperation from the CTF, plus matching funds, to promote further the development of an ESCO Market and the use of insurance instruments for SMEs in the service sector in Colombia.[19] This will be further enhanced by matching of US$5 million funds from the Colombian Sustainable Energy Finance (C-SEF) Program.[20]

## Germany's questions

> ***Q: The proposal suggest that an additional USD 10mio. will be provided through a new IDB lending operation that is yet to be approved, while it provides only very little detail on the actual co-funding to be provided by Bancoldex itself. Given the substantial degree of concessionality proposed for the combined loan and grant contributions, and the importance the CTF results framework places on co-funding and financial leverage, we would appreciate a more detailed/itemized estimation of anticipated cofunding by IDB, Bancoldex, as well as partner LFIs/insurers and if applicable equity contributions by final borrowers (i.e. hotels).***

[16] According to statistics from the Colombian National Administrative Department of Statistics (DANE)

[17] PROURE's *Action plan 2015, with a vision to 2025* (p.134)

[18] Revised CTF Investment Plan for Colombia. http://bit.ly/revCTFcol2

[19] Project 2.3 presented in the Revised CTF Colombia Investment (p.20).

[20] Project 2.4 presented in the Revised CTF Colombia Investment (p.20).

The **degree of leverage of CTF resources** depends on: (i) whether they are reimbursable or not; (ii) the terms and conditions required by beneficiary investments (currency, discount rate and loan and grace periods); and (iii) the specific financial terms of US$ operations in the domestic financial market, given the particular mechanism for channeling CTF resources into the local financial market contemplated under this Program.

The **leverage calculation of the CTF** reimbursable resources of about US$ 10 million from an IDB loan to Bancoldex and another US$ 4-6 million from local financial institutions was made taking into account the results of a financial model that estimated the interest rate and loan and grace periods that Bancoldex would have to offer to local financial institutions so that these institutions would in turn be able to offer adequate terms and conditions to potential beneficiaries that would result in attractive internal rates of return for their EE investment projects. Those conditions included a discount rate in domestic currency at or slightly above the financial system's average funding rate[21] (4.1% at the end of April) and loan and grace periods of six years and six months, respectively.[22] It should be noted that CTF reimbursable resources have a much lower leveraging power than outright grants. The Project and Bancoldex teams estimated that if Bancoldex were to receive the US$10 million in CTF support under the form of grants, those resources would have leveraged 4 to 5 times more resources, instead. This is due to the fact that the only concessionality of reimbursable CTF resources is the interest rate, since all the capital has to be reimbursed eventually.

The leveraging power of US$ CTF resources is further reduced when the loan is in US$ but the demand for investment financing is in **local currency** since an exchange rate risk will have to be borne by local financial institutions at a cost.[23] Taking into account the particular mechanism for channeling CTF resources that will be used under the program (see explanation below), this exchange rate risk is expected to be managed by local financial institutions.

The prudential regulations established by the Colombian Central Bank prevent any domestic financial institution from borrowing in foreign currency to lend in local currency. To comply with this prudential regulation, while being able to generate the resources required to provide the concessionality offered by the project in local currency terms, Bancoldex will have to lend to local financial institutions disbursed program resources in foreign currency under the same loan and grace periods offered by the CTF, but at the prevailing market rate for US$ loans[24,25]. The net present value of the difference between the income generated by such loans and the interest of the CTF debt assumed by Bancoldex will provide the resources in local currency that Bancoldex will have available to subsidize the discount rate for this type of projects to a level that would stimulate the demand for financing (per our financial model,

[21] Interest rate of the 90-day Certificate of Deposit (DTF).

[22] Under the current state of knowledge on EE projects and financial market conditions, these would be the minimum financing conditions that would make EE projects attractive for potential investors.

[23] The CTF TFC has approved taking steps towards providing loans in local currency, but only for the case of private sector operations.

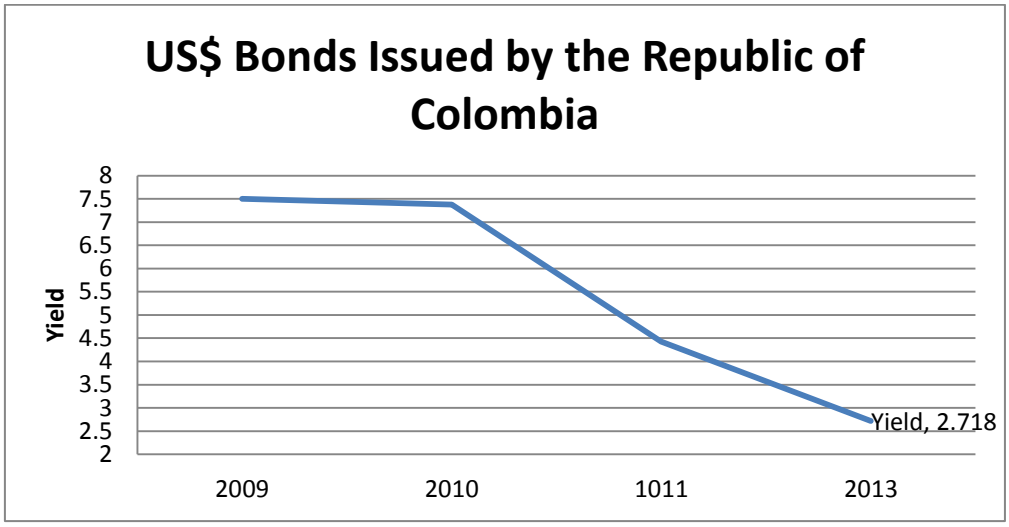
[24] Needless is to say that if US$ interest rates in the local financial market are relatively low, the return that Bancoldex would be able to generate with CTF resources will also be very modest, limiting the leverage potential of the latter.

[25] Banks could offer an interest rate slightly below the market rate to mitigate potential exchange rate risks.

a discount rate in domestic currency at or slightly above DTF - Certificate of Deposit). Bancoldex financial team has estimated that, under recent market conditions, such net present value (equivalent to some US$1.9 million) would be able to leverage around US$10 more million in additional financing from the IDB loan to Bancoldex.

Finally it is worth pointing out that the leveraging power of CTF reimbursable concessional resources in **Colombia's domestic financial market** has diminished over time. This has happened not only because of the huge expansion in international liquidity brought about by the 2008 global financial crisis and its sequels, which lowered interest rates in US$ term worldwide, but also because of the enviable economic performance of the Colombian economy since then. Such performance has resulted in a systematic reduction in country risk as reflected by the shrinking spread of foreign-currency-denominated Colombian government debt vis-à-vis US Treasury bonds for the same maturities and by the improvements of the country's credit ratings in recent years.

To illustrate the country's improved access to foreign-currency-denominated financing in recent years, Figure 1 illustrates the evolution of the yield of Colombia's 10-year Treasury Bonds since 2009. As can be readily seen, the yield that the country has had to offer in order to gain access to foreign exchange financing have declined dramatically in recent years, thus reducing the relative leveraging power of CTF concessional resources in the domestic financial market under the mechanism for channeling CTF resources into the domestic financial market previously explained.




It is worth pointing out that in the recent presentation of the Revised Colombia Investment Plan,[26] which was endorsed by the CTF Committee, the Government of Colombia highlighted that the leveraging of CTF resources was constrained by fiscal and domestic financial market conditions. In particular, the authorities highlighted that:

- "**Required minimum of leveraged loan funds are too high for Colombia**. This has become a strong barrier for initiating with more speed implementation, due to the difficulty to include the resulting high amounts in the national budget programmed

[26] Powerpoint presentation by the Government of Colombia. http://bit.ly/CTFcol2ppt

accordingly Colombia's medium term fiscal framework. The GoC considers important the CTF's on-going discussion related to bringing down this required minimum and in this direction proposes in the revised IP a different leveraged loan funds strategy viable in the current medium term fiscal framework;" and

- "**Current markets conditions in Colombia limit project implementation as expected in the original IP**. The evolution of developed economies and the resulting effect on liquidity and international interest rates, increases or diminishes long term demand for dollars by financial intermediaries. The associated financial market conditions in Colombia have limited the level of effective incentive that results from CTF concessional conditions. For this reason innovative complementary instruments had to be developed to create and effective project implementation conditions. This innovations, mainly designed under the energy efficiency Hotels and Clinics project, have made viable Hybrid Buses Project and is expected a similar impact on the remaining energy efficiency projects."

To sum up, based on the calculations mentioned above and the current situation of the financial markets in Colombia, it is expected that CTF resources will leverage US$10 million from an IDB loan to Bancoldex (CO-L1132). In addition, given the financial system's standard practice of asking their clients to provide an equity contribution of between 20 to 30% of the total value of their projects, an additional leverage of between US$4-US$ 6 million from program beneficiaries could result.

***Q: Dependence on a single insurance company for the development and roll-out of the performance guarantee scheme appears a likely to become a major bottleneck for wider replication of the project. Consequently, we are concerned that transformational impact might remain far below expectations, if this issue is not addressed more directly and from the outset with additional measures and efforts to extend the scale and scope of involved public and private FIs (in particular insurers).***

A: **The program does not limit the participation of insurance companies**. While the program has already secured the participation of the largest Colombian insurance company (Suramericana), which is already developing a performance insurance policy for the program, it is open to any other companies that may wish to join it. In fact, during program preparation, the IDB and Bancoldex conducted consultations with other insurance companies in Colombia (La Equidad and Mapfre) which demonstrated an interest in developing similar products. Consultations with several insurance companies helped to shape and improve the program, as outlined below.

An important factor for attracting insurance companies to support the current program was the fact that it is developing two other risk mitigation tools that are essential for the project replication: **the development of a standard contractual agreement between potential borrowers and service providers, and a third-party oversight mechanism of technical services provided and performance of the projects**. These instruments are also expected to be further promoted by the program and are the basis under which the insurance company that is already supporting the program decided to do it.

It should be noted that the expected policy coverage of the service / project performance of the program will be integrated into existing policy instruments, and will not require any major regulatory changes in insurance practices – making it more-easily replicable by other insurers.

Another key replication factor to consider is that with any insurance product, an insurance company is supported by financial investments from one or more reinsurance company. Reinsurance companies (SwissRe, Hanover Re, Munich Re) already provide **reinsurance** to insurance companies in developed countries to provide energy performance insurance. In this program, Suramericana has already received support from SwissRe. As a reinsurance company is already planning to reinsure Suramericana's performance insurance policy, other local insurance companies may also be able to use this same type of reinsurance. If it works well, the insurance product developed under this program has the potential to be extended to other countries and insurance companies in Latin America.

Further, as already indicated in the response to the UK above, the effective implementation and replication of the program in Colombia is being ensured through a number of partnerships **with governmental institutions**[27] that support the continuation and expansion of this innovative financial and operational mechanism to other sectors.

As also mentioned in response to the query of the government of the UK above, and as presented in the endorsed Revised CTF Investment Plan for Colombia, **other activities planned to promote energy efficiency under the CTF** will build on this program to promote further replication of its business model. In particular, the IDB's Multilateral Investment Fund (MIF) and the Inter-American Investment Corporation (IIC, part of the IDB Group) intend to use US$4.52 million for loans and grants for technical cooperation from the CTF, plus matching funds, to promote further the development of an ESCO Market and the use of insurance instruments for SMEs in the service sector in Colombia[28].

***Within this context, the proposal mentions that Bancoldex will be supported in the promotion of the program to LFIs. However,***

- ***(i) recent experience with the limited replication across other FIs of Bancolombia's Green Guarantee Mechanism,***
- ***(ii) the "asset-based lending approach" of LFIs and unlikelihood of the latter changing their business practice to accept cash-flows from EE investments as collateral, suggest that more comprehensive efforts might be necessary to secure uptake and replication by a wider spectrum of FIs***

The current program was **designed considering the recent experience of Bancolombia's Green Guarantee Mechanism**. One of the barriers for the effective expansion of the Bancolombia Green Guarantee Mechanism to other LFIs identified in the market analysis

[27] Collaboration for the promotion and design of the program is for instance already underway with UPME (under the mandate of PROURE ), with the Colombian Ozone Technical Unit - UTO (for joint promotion of air-conditioning replacements and scrapping of equipment's) and with the ministries of Environment and Energy (for integration of the program as part of the Low Carbon Development Strategy of Colombia).

[28] Project 2.3 presented in the Revised CTF Colombia Investment (p.20).

undertaken in the program for Bancoldex is the lack of appetite by potential local clients to take credit for EE efficient projects given that they perceive these as having "high-risk" when compared to other investments. The risk management mechanisms developed under the Bancoldex program (standard contract, third party technical verifier and insurance) were precisely developed to address EE projects' risks perceived by clients and motivate them to invest in these projects.

The **consideration of how to leverage and integrate LFIs participation** in the program design and implementation was essential. Bancoldex is a second-tier bank, which mainly works through most LFIs in Colombia. The activities developed, as well as market studies undertaken, were done in collaboration with LFIs and took fully into account the type of complexity, risks and opportunities commercial banks would consider under a new financing line to support EE. The selection of the sub-sectors for piloting the program (hotels/hospitals) was made among other reasons because these are attractive for the LFIs and because they represent an existing large EE investment potential.

An important consideration of the program was shifting LFI finance provision from "asset finance" (which gives loans tied to collateral) to "project finance" (which gives loans based on expectations of returns from a project). Whereas the culture of LFIs providing finance based on assets may continue, it is expected that the program will provide many examples on how EE improvements can be perceived as benefits and potential cash flows. Even if future revenue streams and EE equipment are not considered as assets or collateral at first, the EE improvements and risk management instruments of the program are expected to reduce the perception of risks by LFIs and facilitate investments in these types of projects. In fact, in discussions between IDB, Bancoldex and over 30 local financial institutions on 3 May 2013, representatives responded very positively to the **risk-mitigation measures identified in the program**: potential lenders to the program noted that third-party oversight reduced technical risks (third party validator / verifier) – a major concern to them which is outside of their normal expertise. Commercial banks noted that because performance guarantee insurance minimized their risk exposure to the projects, they could lend to a greater number of hotels and hospitals; in addition, reducing risk would allow commercial banks to lend at smaller spreads, lowering the ultimate interest rates available to clients.